TO:	**Chairman and Members**	**DATE:**	**March 10, 2011**
SUBJECT:	**Hearing Standards for Correctional Officer Applicants**	**AGENDA ITEM:**	**G**
Resource Person:	**Shelley Montgomery**	**ACTION:**	
		INFORMATION:	**X**

Summary:

This information item is included to inform the Corrections Standards Authority Board about research and findings for the development of hearing standards for Correctional Officer applicants.

Background:

The hearing standard for entry-level Correctional Officers was last updated in 1992, nearly two decades ago. To establish a hearing standard in 2011, CSA took the following actions:

- Supplemented existing job analyses with research that supplies additional information on hearing-critical job functions and activities that represent the current job.
- Incorporated scientific advances in research methods related to hearing abilities to produce a standard supported by strong empirical evidence.
- Measured and recorded background noise in a representative sample of prisons.
- Utilized advanced, standardized statistical methods for analyzing workplace noise environments to determine their impact on hearing-critical job functions.
- Incorporated recent methods to test hearing ability, especially as they relate to speech communication in quiet and in noisy environments.
- Supplemented the methods used to test hearing ability so that individuals with auditory prostheses (hearing aids, cochlear implants, and other devices) can be tested.

Findings:

Highlights of the research findings are as follows:

- Correctional Officers must rely on effective speech communication to perform hearing-critical job functions such as responding to a variety of disturbances and emergencies, communicating orally with inmates or other Correctional Officers, and coordinating movements with other Correctional Officers.
- Speech communication is a frequently used and demanding job function in the prison environment.
- More than 28% of the cues for detecting incidents and emergencies are exclusively based on hearing, and another 23% involve hearing as a critical component.

- Correctional Officers must defend themselves while wearing protective headgear and other protective equipment during certain adversarial encounters such as cell extractions and riots. This protective headgear may interfere with the use of auditory prostheses.
- Hearing-critical functions are performed during all shifts.
- Background noise levels in prison environments where Correctional Officers perform hearing-critical job functions are measured in decibels, abbreviated dB (A). The measurements in a variety of locations within the prisons ranged from almost 90 dB(A) at its loudest to 62 dB(A) at its softest, with average values between about 70 dB(A)—this would be subjectively characterized as "loud"—and 85 dB(A) —this would be subjectively characterized as "exceptionally loud."
- The likelihood of effective speech communication in prison noise environments for a person with normal hearing ranges from less than 20% when normal vocal effort is used up to 100% when shouted effort is used.
- Even small reductions in effective speech communication caused by hearing impairment can have substantial adverse consequences because effective communication is already made difficult by the background noise levels in prisons.
- Measures of speech recognition in noise are better predictors of functional hearing abilities used by Correctional Officers to perform hearing-critical job functions than traditional measures based on pure-tone audiometry.

Screening Test and Standard:

The most appropriate and valid test for evaluating the functional hearing ability of applicants for the Correctional Officer position is the Hearing in Noise Test (HINT). The HINT provides better objective prediction of an applicant's ability to perform hearing-critical job functions than do measures of hearing sensitivity obtained with other methods such as pure-tone audiometry.

The new standard is based on measures of speech recognition in quiet and in a background noise condition that is representative of the levels existent in the Correctional Officer's workplace. The screening criterion in quiet is 27 dB (A) or less. In noise at 75 dB (A) the screening criterion is 71 dB (A) or less, corresponding to a signal/noise ratio of -4.0 dB or lower.

Recommendation/Action Needed:

Information only